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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/729,752

Applicant(s)

DEAN ET AL.

Examiner

LECHI TRUONG

Art Unit

2194

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-6 and 10-46 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6 and 10-46 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-08)
Paper No(s)/Mail Date 03/25/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1, 3-6, 10-46 are presented for the examination. Claims 2, 7-9 are cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1, 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley et al (US Patent 5,926,775) in view of Tuatini(US 2001/0047385 A1) and further in view of Fisher(US 6689319 B1).

As to claim 1, Brumley teaches an electronic device (the computer 102 running an operating system... provide field electrical, col 5, ln 33-38), an image acquisition device, a DAQ device, col 5, ln 33-38), the electrical device independent of an interface protocol of the image acquisition device (the generic functionality which is generic to or independent of a number of DAQ devices or boards, i.e., is independent of a family of devices, col 9, ln 34-38/ plurality of mini-driver primitives each perform a portion of controlling the DAQ device, i.e., each of the plurality of mini-driver primitives perform operations to control specific resources of the DAQ device, col 3, ln 65-67 to col 4, ln 1-3/ The interpreter operates to configure device family independent or hardware independent features , for each device, col 4, ln 20-25), a request from

the user (calls from the DAQ user application, col 3, ln 7-9), receiving a request from a requester to access the image acquisition device, col 3, ln 7-9/ col 27, ln 20-25), establishing a communication channel with the image acquisition device(col 12, ln 5-15/ Fig. 7), accessing a feature of the image acquisition device using the communication channel(col 6, ln 1-5), the request specifies a format for a response from the image acquisition (col 10, ln 56-67).

Brumley does not teaches to receiving the response in the specified format which specified by the request. However, Tuatini teaches receiving the response in the specified format(client system 320 requests services of an application program by sending request messages in a client-specific format to the application program, and receives results of the services in response messages in a client-specific format, para[0066], ln 1-3).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley with Tuatini to incorporate the feature of receiving the response in the specified format which specified by the request because this provides the flexibility needed by a group to provide applications tailored to their customers, and that would help to reduce the cost of developing and maintaining the applications.

Brumley and Tuatini do not teach establishing a communication channel with a hardware interface of the image acquisition device, the communication channel operating independently of the interface protocol of the image acquisition device; and configuring properties of the image acquisition device supported by independently of the interface protocol of the image acquisition device. However, Fisher teaches establishing a communication channel with a hardware interface of the acquisition device, configuring physical connection of the acquisition device supported by the hardware (The typical printhead is controlled by a printhead controller that may be a

combination of software, firmware and/or hardware, col 5, ln 25-30/ the printhead controller must have a channel for each dispenser that is to be independently controlled. To decide whether to fire any dispenser, the controller references an image or data file that contains the information about what to fire at each location. If programmed with information regarding the relative locations of each dispenser, the controller can translate the image or data file into a dispenser position to determine when a dispenser is fired as the printhead is moved. A channel can also be set aside to independently control the activation of other devices such as an image acquisition system. In such a case, such a channel may comprise another controller. For example, if a device controller comprises seven channels, six of which are used to independently control six dispensers of a printhead and one is used to control a camera, the six channels used to control the dispensers would be considered part of one controller, i.e., the printhead controller, and the one channel used to independently control the camera would be considered part of another controller, col 5, ln 35-55).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley and Tuatini with Fisher to incorporate the features of establishing a communication channel with a hardware interface of the image acquisition device, establishing a communication channel with a hardware interface of the image acquisition device because this provides such a means for a computerized controller to active a camera based on reading of a image or data file.

As to claim 3, Brumley teaches communication with an interface of the image acquisition device to establish communication (col 11, ln 31-36), establishing one or more communication procedures for communication with the image acquisition device (col 11, ln 31-

37), and the communication procedures providing instruction on how data transfers are managed across the communication channel (col 27, ln 24-34).

As to claim 4, Brumley teaches the one or more communication procedures provides instructions for at least one of, logging data to file, buffering data received from the image acquisition device, generating events, and translating error codes from the image acquisition device (col 3, ln 14-20).

As to claim 5, Brumley teaches the requester is received from a user interface (col 3, ln 9-13).

As to claim 6, Brumley teaches user interface comprises an object-based interface having methods and attributes (col 13, ln 21-30).

3. Claims **10-14, 19-25, 30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley et al (US Patent 5, 926775) in view of Beck (US 20040088349 A1) and further in view of Fisher(US 6689319 B1).

As to claim 10, Brumley teaches a first communication link between a user of the electronic device and an image acquisition engine (the interpreter performing DAQ driver level functions in response to receiving the call from the DAQ user application, col 27, ln 60-65), establishing a second communication link between the image acquisition engine and an interface of the selected image acquisition device (the interpreter generating calls to a plurality of mini-driver primitives in response to receiving the call from the DAQ user application; the plurality of mini-driver primitives each performing a portion of controlling the DAQ device, col 27, ln 25-

30), the selected image acquisition device to allow the user to communication with the selected image acquisition device(col 3, ln 34-40/ col 11, ln 1-5).

Brumley does not teach the image acquisition engine generating a response in a user-specified format. However, Beck teaches the engine generating a response in a user-specified format (the Web server requests the ISP to perform an action, which consists of providing information about the end-user's Internet access device and access link bandwidth. After the ISP responds to the Web server with that information, it uses that information to formulate its response to end-user's original request in a format appropriate for that end-user's client type, para [0032], ln 6-12).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley with Beck to incorporate the feature of the engine generating a response in a user-specified format because this performs the requested user-specific action and provides the Web server with information relating to the result of the requested action.

Brumley and Beck do not teach establishing a communication channel with a hardware interface of the image acquisition device, the communication channel operating independently of the interface protocol of the image acquisition device; and configuring properties of the image acquisition device supported by independently of the interface protocol of the image acquisition device. However, Fisher teaches establishing a communication channel with a hardware interface of the acquisition device, configuring physical connection of the acquisition device supported by the hardware(The typical printhead is controlled by a printhead controller that may be a combination of software, firmware and/or hardware, col 5, ln 25-30/ the printhead controller

must have a channel for each dispenser that is to be independently controlled. To decide whether to fire any dispenser, the controller references an image or data file that contains the information about what to fire at each location. If programmed with information regarding the relative locations of each dispenser, the controller can translate the image or data file into a dispenser position to determine when a dispenser is fired as the printhead is moved. A channel can also be set aside to independently control the activation of other devices such as an image acquisition system. In such a case, such a channel may comprise another controller. For example, if a device controller comprises seven channels, six of which are used to independently control six dispensers of a printhead and one is used to control a camera, the six channels used to control the dispensers would be considered part of one controller, i.e., the printhead controller, and the one channel used to independently control the camera would be considered part of another controller, col 5, ln 35-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Brumley and Beck with Fisher to incorporate the features of establishing a communication channel with a hardware interface of the image acquisition device, establishing a communication channel with a hardware interface of the image acquisition device because this provides such a means for a computerized controller to active a camera based on reading of a image or data file.

As to claim 11, Brumley teaches associating the image acquisition engine with a driver adapter for communicating with the interface of the selected image acquisition device (col 3, ln 34-40).

As to claim 12, Brumley teaches selecting the image acquisition device from a plurality of image acquisition devices associated with electronic device (col 11, ln 1-5).

As to claim 13, Brumley teaches abstracting a representation of the selected image acquisition device for use in establishing the second communication link by using the information provided by the driver (col 27, ln 29-33).

As to claim 14, Brumley teaches rendering on a display device of the electronic device a user interface for use by the user for interfacing with the image acquisition engine, (col 7, ln 24-34).

As to claim 19, Brumley teaches requesting the image acquisition engine to determine each interface associated with an image acquisition device installed an accessible to image engine, (col 3, and ln 34-40).

As to claim 20, Brumley teaches determine each interface associated with an image acquisition engine installed an accessible to image engine (col 3, ln 34-40).

As to claim 21, Brumley teaches one or more image acquisition device types (col 3, ln 48-52).

As to claim 22, Brumley teaches providing the image acquisition engine with one or more request for configuring the selected image acquisition device (col 3, ln 55-67).

As to claim 23, Brumley teaches configuring the selected image acquisition device based on each provided request (col 11, ln 1-6).

As to claim 24, Brumley teaches configuring a type of image acquisition based on each provided request (col 11, ln 1-6).

As to claim 25, Brumley teaches the type of image acquisition comprises still image acquisition (col 11, ln 1-6).

As to claim 30, Brumley teaches the image acquisition engine is capable of feeding to the user one or more live images from the selected image acquisition device (col 7, ln 24-30).

4. Claims **15, 16, 18, 26-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley et al (US. Patent 5, 926775) in view of Beck (US 20040088349 A1) in view of Fisher (US 6689319 B1) and further in view of MacDonald (US 6,614916 B2)

As to claim 15, Brumley, Beck and Fisher do not teach triggering the image acquisition device on a selected event to acquire one or more image. However, MacDonald teaches image acquisition device on a selected event to acquire one or more image (machine vision system 100 triggers acquisition of a full frame image of a feature of interest 112 when the feature 112 is within the field of view 114 of video camera 102, col 4, and ln 44-48).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley, Beck and Fisher with MacDonald to incorporate the feature of image acquisition device on a selected event to acquire one or more image because this avoids at least some of the difficulties associated with conventional triggering methods.

As to claim 16, MacDonald teaches previewing one of more images from the image acquisition device before, while or after the triggering of the image acquisition device occurs (col 3, ln 25-36).

As to claim 18, MacDonald teaches identifying a region of interest for an image acquired by the image acquisition device (col 6, ln 5-11).

As to claims 26, 27, 28, 29, MacDonald teaches image acquired in a sequence, number of images a single image, a plurality of images (col 4, ln 5-60/ col 3, ln 1-3/ col 4, ln 40-45/ col 5, ln 1-5).

5. Claims **17 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley et al (US. Patent 5, 926775) in view of Beck (US 20040088349 A1) in view of Fisher (US 6689319 B1) and further in view of Casini (US. Patent 5, 201027).

As to claim 31, Brumley, Beck and fisher do not teach defining a color space for the images acquired by the image acquisition device. However, Casini teaches defining a color space for the images acquired by the image acquisition device (select the fundamental colors, change them and partially superimpose them, with simultaneous on screen display or printout on paper, col 3, ln 23-26).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley , Beck and Fisher with Casini to incorporate the feature of defining a color space for the images acquired by the image acquisition device because this allows the system to perform possible variations in the design and in the number of colors which simultaneously direct on-screen display.

As to claim 17, Casini teaches images from the image acquisition device on a display (col 3, ln 39-43).

6. Claims 32-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley et al (US Patent 5,926,775) in view of Trsar(US 5778328 A) and further in view of Tran(US 20040119620) and further in view of Fisher(US 6689319 B1).

As to claim 32, Brumley teaches an electronic device (the computer 102 running an operating system... provide field electrical, col 5, ln 33-38), an image acquisition device, a DAQ device, col 5, ln 33-38), the electrical device independent of an interface protocol of the image acquisition device (the generic functionality which is generic to or independent of a number of DAQ devices or boards, i.e., is independent of a family of devices, col 9, ln 34-38/ plurality of mini-driver primitives each perform a portion of controlling the DAQ device, i.e., each of the plurality of mini-driver primitives perform operations to control specific resources of the DAQ device, col 3, ln 65-67 to col 4, ln 1-3/ The interpreter operates to configure device family independent or hardware independent features , for each device, col 4, ln 20-25), receiving a request from a requester to access the image acquisition device, col 3, ln 7-9/ col 27, ln 20-25), creating a communication channel with the image acquisition device(col 12, ln 5-15/ Fig. 7), accessing a feature of the image acquisition device using the communication channel, feature affecting a resulting image acquired from the particular image acquisition device, col 10, ln 1-5/ln56-67), teaches the request specifies a format for a response from the image acquisition (col 10, ln 56-67).

Brumley does not teach providing information on available types of triggers supported by the image acquisition device. However, Trsar teaches providing information on available types

of triggers supported by device(The engine analyzer 10 supports all of the three standard types of triggering for digital display scopes in engine analyzers , col 4, ln 28-32/ This Trigger Check routine first checks at 71 to see if signal triggering has been selected in the icon box 40a. If it has not, this means that auto triggering is selected, since this is the only other type of triggering is selected, since this is the only other type of triggering available in this mode, so the program then at 72 marks the start of the frame as the trigger location and then indicates, at 73, that a trigger has been found and returns at 74 to the decision 59 in the routine of FIG. 5, col 7, ln 3-11).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley with Trsar to incorporate the feature of providing information on available types of triggers supported by device because this controllers the acquisition and display of a high-voltage secondary ignition signal waveform and provides the user selection of the sweep and trigger modes.

Brumley and Trsar do not teach one of a plurality of image acquisition devices, the plurality of image acquisition devices implementing a plurality of different acquisition technologies, automatically determining available types of triggers supported by a particular acquisition device. However, Tran teaches one of a plurality of image acquisition devices, the plurality of image acquisition devices implementing a plurality of different acquisition technologies, automatically determining available types of triggers supported by a particular acquisition device (different types of acquisition devices may be used, para [0012], ln 8-10/to one or more of the input channels to acquire data of a specific type. DSOs also provide a full range of analog triggering functions such as, rising edge, pulsewidth, and runt triggering, Para[0002], ln 7-10/Each of the acquisition devices 110.sub.1 through 110.sub.N produces a

respective trigger enable signal TE.sub.1 through TE.sub.N. Each of the produced trigger signals TE.sub.1 through TE.sub.N is, para[0019], In 7-14/The above-described system 100 of FIG. 1 provides for a plurality of data acquisition devices 110, where each acquisition device provides a respective trigger signal determined according to the decoding or detection of sequential and/or logical conditions of its respective input channels, as well as detection of analog signal conditions, para[0022], In 1-7/ an analog trigger circuit 109 receives the analog signals under test and provides a trigger output signal TA to the first 111 and second 112 event decoders upon detection of a preselected analog signal condition, para[0014], In 7-12/The first event decoder 111 processes one or more of the received input channel data streams CH1-4 according to a combinational and/or sequential logic function to determine whether a predefined triggering condition exists, Para[0019], In 1-5/ The second event decoder 112 preferably decodes or determines the occurrence of the same triggering event and responsively produces a triggering signal T adapted to control the acquisition unit 113, para[0029], In 6-10).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley and Trsar with Tran to incorporate the feature of one of a plurality of image acquisition devices, the plurality of image acquisition devices implementing a plurality of different acquisition technologies, automatically determining available types of triggers supported by a particular acquisition device because this provides a signal acquisition triggering using multiple signal acquisition devices and/or multiple input channels .

Brumley Trsar and Tran do not teach the communication channel operating independently of the interface protocol of the image acquisition device; and configuring

properties of the image acquisition device supported by independently of the interface protocol of the image acquisition device. However, Fisher teaches establishing a communication channel with a hardware interface of the acquisition device, configuring physical connection of the acquisition device supported by the hardware (The typical printhead is controlled by a printhead controller that may be a combination of software, firmware and/or hardware, col 5, ln 25-30/ the printhead controller must have a channel for each dispenser that is to be independently controlled. To decide whether to fire any dispenser, the controller references an image or data file that contains the information about what to fire at each location. If programmed with information regarding the relative locations of each dispenser, the controller can translate the image or data file into a dispenser position to determine when a dispenser is fired as the printhead is moved. A channel can also be set aside to independently control the activation of other devices such as an image acquisition system. In such a case, such a channel may comprise another controller. For example, if a device controller comprises seven channels, six of which are used to independently control six dispensers of a printhead and one is used to control a camera, the six channels used to control the dispensers would be considered part of one controller, i.e., the printhead controller, and the one channel used to independently control the camera would be considered part of another controller, col 5, ln 35-55).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley Trsar and Tran with Fisher to incorporate the features of he communication channel operating independently of the interface protocol of the image acquisition device; and configuring properties of the image acquisition device supported by independently of the interface protocol of the image acquisition device because this provides

such a means for a computerized controller to active a camera based on reading of a image or data file.

As to claim 33, Brumley teaches the request specifies format for a response from the image acquisition device (col 10, ln 56-67).

As to claim 34, Brumley teaches communication with an interface of the image acquisition device to establish communication (col 11, ln 31-36), establishing one or more communication procedures for communication with the image acquisition device (col 11, ln 31-37), and the communication procedures providing instruction on how data transfers are managed across the communication channel (col 27, ln 24-34).

As to claim 35, Brumley teaches the one or more communication procedures provides instructions for at least one of, logging data to file, buffering data received from the image acquisition device, generating events, and translating error codes from the image acquisition device (col 3, ln 14-20).

As to claim 36, Brumley teaches the requester is received from a user interface (col 3, ln 9-13).

As to claim 37, Brumley teaches user interface comprises an object-based interface having methods and attributes (col 13, ln 21-30).

As to claim 38, it is an apparatus claim of claim 32; therefore, it is rejected for the same reason as claim 32 above.

As to claim 39, Brumley teaches associating the image acquisition engine with a driver adapter for communicating with the interface of the selected image acquisition device (col 3, ln 34-40).

As to claim 40, Brumley teaches selecting the image acquisition device from a plurality of image acquisition devices associated with electronic device (col 11, ln 1-5).

As to claim 41, Brumley teaches abstracting a representation of the selected image acquisition device for use in establishing the second communication link by using the information provided by the driver (col 27, ln 29-33).

As to claim 42, Brumley teaches rendering on a display device of the electronic device a user interface for use by the user for interfacing with the image acquisition engine, (col 7, and ln 24-34).

7. Claims **43, 44, 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley et al (US. Patent 5, 926775) in view of Trsar(US 5778328 A) and further in view of Tran(US 20040119620) in view of Fisher(US 6689319 B1), as applied to claim 38 above, and further in view of MacDonald (US 6,614916 B2).

As to claim 43, Brumley, Trsar, Tran and Fisher do not teach triggering the image acquisition device on a selected event to acquire one or more image. However, MacDonald teaches image acquisition device on a selected event to acquire one or more image (machine vision system 100 triggers acquisition of a full frame image of a feature of interest 112 when the feature 112 is within the field of view 114 of video camera 102, col 4, and ln 44-48).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley , Trsar , Tran and Fisher with MacDonald to incorporate the feature of image acquisition device on a selected event to acquire one or more

image because this avoids at least some of the difficulties associated with conventional triggering methods.

As to claim 44, MacDonald teaches previewing one of more images from the image acquisition device before, while or after the triggering of the image acquisition device occurs (col 3, ln 25-36).

As to claim 46, MacDonald teaches identifying a region of interest for an image acquired by the image acquisition device (col 6, ln 5-11).

8. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brumley et al (US. Patent 5, 926775) in view of Trsar(US 5778328 A) in view of Tran(US 20040119620) and further in view of Fisher(US 6689319 B1), as applied to claim 38 above, and further in view of Casini (US. Patent 5,201027) .

As to claim 45, Brumley, Trsar, Tran and Fisher do not teach images from the image acquisition device on a display (col 3, ln 39-43). However, Casini teaches images from the image acquisition device on a display (col 3, ln 39-43).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the teaching of Brumley, Trsar, Tran and Fisher with Casini to incorporate the feature of mages from the image acquisition device on a display because this allows the system to perform possible variations in the design and in the number of colors which simultaneously direct on-screen display.

/LeChi Truong/

Examiner, Art Unit 2194